FAA
Aviation Safety

EMERGENCY AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/

DATE: February 16, 2011
AD #: 2011-05-51

Background

This emergency AD was prompted by three reports of incorrectly assembled low-pressure fuel system ejectors; with one of them resulting in an uncommanded engine in-flight shutdown. The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, issued emergency AD No. 2011-0023-E on February 9, 2011 (corrected on February 10, 2011). That AD states:

> In October 2009, Turbomeca issued SB [Service Bulletin] No. 292 73 0826, Version A that instructed operators to check the effectiveness of the bonding of the ejector jet installed on the low-pressure fuel system between the tank and the high-pressure fuel pump.
>
> So far, Turbomeca have been informed of three discrepancies with the reassembly of the ejector following a maintenance procedure performed during accomplishment of Turbomeca SB No. 292 73 0826, Version A.
>
> In all three cases, the discrepancies led to a "one-off" abnormal evolution of gas generator (NG) rating during engine starting. In one of these cases, this resulted in an uncommanded in-flight shutdown, during a cruising phase at 8,000 feet.

This condition, if not corrected, could result in uncommanded engine in-flight shutdown of one or both engines in a two-engine helicopter and an emergency autorotation landing or accident.

Relevant Service Information

We reviewed Turbomeca Mandatory Service Bulletin (MSB) No. A292 73 0834, Version B, dated February 8, 2011, and SB No. 292 73 0826, Version B, dated February 4, 2011. This service information describes procedures for inspecting for proper ejector installation.

FAA's Determination

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

AD Requirements

This AD requires inspecting the fuel ejector in the body of the fuel ejector assembly for proper installation by checking that the circlip is properly seated in its groove using Turbomeca MSB No. A292 73 0834, Version B, dated February 8, 2011.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Presentation of the Actual AD

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

2011-05-51: Turbomeca: Directorate Identifier 2011-NE-06-AD.

Effective Date

(a) This Emergency AD is effective upon receipt.

Affected ADs

(b) None.

Applicability

(c) This Emergency AD applies to Turbomeca Arriel 1E2, 1S, and 1S1 turboshaft engines that have incorporated Turbomeca SB No. 292 73 0826, Version A, or incorporated Turbomeca Internal Consign (IC) No. 298468. These engines are installed on, but not limited to, Eurocopter Deutschland MBB BK117-C2 and BK117-C1, and Sikorsky S-76A series and S-76C series, helicopters.

Unsafe Condition

(d) This AD was prompted by three reports of incorrectly assembled low-pressure fuel system ejectors; with one of them resulting in an uncommanded engine in-flight shutdown. We are issuing this AD to prevent uncommanded engine in-flight shutdown of one or both engines in a two-engine helicopter and an emergency autorotation landing or accident.

Compliance

(e) Comply with this AD within the compliance times specified, unless already done.

Fuel Ejector Inspection

(f) Inspect the fuel ejector in the body of the fuel ejector assembly for proper installation by checking that the circlip is properly seated in its groove. Use Paragraph 2.B of the Instructions to be Incorporated, of Turbomeca Mandatory Service Bulletin (MSB) No. A292 73 0834, Version B, dated February 8, 2011 to do the inspection. Inspect at the following compliance times:

(1) For helicopters having at least one of the two affected engines experiencing starting difficulties, inspect within 5 flight hours (FH) after the effective date of this AD.

(2) For helicopters having only one affected engine, and experiencing starting difficulties in that engine, inspect within 20 FH after the effective date of this AD.

Inspection Results

(g) If you find a fuel ejector improperly installed in the body of the fuel ejector assembly, replace the fuel ejector assembly before further flight with a serviceable fuel ejector assembly.

Definition

(h) For the purpose of this AD, starting difficulties occur when N1 stagnation or variations are encountered. During starting, N1 rise shall be continuous and linear up to ground idle.

Credit for Actions Accomplished in Accordance with Previous Service Information

(i) Inspections and replacements done using Turbomeca MSB No. A292 73 0834, Version A, dated February 4, 2011, or Turbomeca Service Bulletin No. 292 73 0826, Version B, dated February 4, 2011, before the effective date of this AD, satisfy the requirements of this AD.

Alternative Methods of Compliance (AMOCs)

(j) The Manager, Engine Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

Related Information

(k) For further information about this AD, contact: Rose Len, Aerospace Engineer, Engine Certification Office, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: (781) 238-7772; fax: (781) 238-7199; e-mail: rose.len@faa.gov.

(l) For copies of the service information referenced in this AD, contact: Turbomeca, 40220 Tarnos, France; phone: 33 559 74 40 00; fax: 33 559 74 45 15; Web site: www.turbomeca-support.com. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803.

(m) EASA AD No. 2011-0023-E, dated February 9, 2011 (corrected on February 10, 2011), also pertains to this AD.

Issued in Burlington, Massachusetts, on February 15, 2011.

Thomas A. Boudreau,
Acting Assistant Manager, Engine and Propeller Directorate,
Aircraft Certification Service.